

# Pre-Test

## Evaluating Expressions, Solving Equations and Inequalities

1. Evaluate the following expression if  $x = 3$ .

$$\left(\frac{1}{4}\right)^x$$

(a)  $\frac{3}{4}$       (b)  $\frac{1}{8}$   
 (c)  $\frac{1}{32}$       (d)  $\frac{1}{64}$

2. Evaluate the following expression if  $m = 6$ .

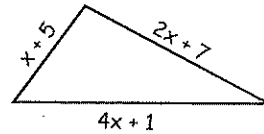
$$(6m - 4m)^2$$

- (a) 24      (b) 64  
 (c) 144      (d) 212

3. The formula to find the volume of a cube is  $V = s^3$ . Find the volume of a cube if  $s = \frac{1}{3}$  in.

- (a)  $\frac{1}{12}$  in.<sup>3</sup>      (b)  $\frac{1}{27}$  in.<sup>3</sup>  
 (c)  $\frac{1}{9}$  in.<sup>3</sup>      (d)  $\frac{3}{10}$  in.<sup>3</sup>

4. Find the perimeter of the following triangle if  $x = 4$  cm.



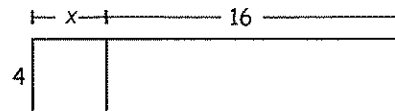
- (a) 24 cm      (b) 41 cm  
 (c) 48 cm      (d) 53 cm

5. The following equation represents the amount of money a local taxi company charges their customers per ride. If a customer rides 20 miles, how much will they be charged? Let  $m =$  miles.

$$\text{Cost Of Ride} = \$2.75m + \$5$$

- (a) \$27.75      (b) \$35.00  
 (c) \$60.00      (d) \$65.00

6. Find the area of the following figure if  $x = 4$  inches.



- (a) 24 in.<sup>2</sup>      (b) 48 in.<sup>2</sup>  
 (c) 64 in.<sup>2</sup>      (d) 80 in.<sup>2</sup>

7. Evaluate the following expression. Let  $x = 14.7$

$$\frac{88.2}{x}$$

- (a) 6      (b) 7  
 (c) 8      (d) 9

8. Evaluate the following expression. Let  $x = 12.5$

$$1.5x$$

- (a) 4.25      (b) 7.5  
 (c) 18.75      (d) 75

9. Mrs. Baldwin's car travels 28 miles per gallon of gasoline used. If Mrs. Baldwin recently traveled 504 miles, which of the following equations would allow you to find how many gallons of gas she used on her trip?

- (a)  $28g = 504$       (b)  $\frac{g}{504} = 28$   
 (c)  $28 + g = 504$       (d)  $504g = 28$

10. A local law firm charges their clients an initial fee of \$200 to retain their services. They also charge \$42 per hour of service in addition to their initial fee. If  $h$  = hours of service, which of the following represents the total amount owed by a client?

- (a)  $h + 42 + 200$       (b)  $42(h + 200)$   
 (c)  $42h + 200$       (d)  $200h + 42$

11. Kendall and Gina have a total of \$39.00. Gina has twice the amount of money that Kendall has. If  $k$  = the amount of money Kendall has, which equation will allow you to find out how much money Kendall has?

- (a)  $2k + k = 39$       (b)  $2 + k = 39$   
 (c)  $2k = 39$       (d)  $k + k = 39$

12. A cell phone service provider charges a flat rate of \$40 per month in addition to \$15 per month for each phone on the account. Select the choice below that would allow you to correctly calculate how much a customer will be charged each month. Let  $p$  = number of phones on the account.

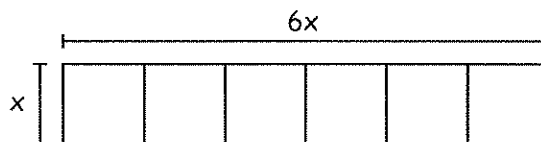
- (a)  $15p = 40$       (b)  $15p + 40$   
 (c)  $40p + 15$       (d)  $55p$

13. The following equation represents how much money Monique earned last month from baby-sitting.  $\$7h = \$392$

If  $h$  = the number of hours Monique worked babysitting, how many hours did she work?

- (a) 35 hours      (b) 42 hours  
 (c) 48 hours      (d) 56 hours

14. Calculate the area of the following figure if  $x = 3$ .



- (a) 189 sq. units      (b) 54 sq. units  
 (c) 42 sq. units      (d) 21 sq. units

15. Last week Gwen earned a weekly total of \$437.50. The following equation can be used to calculate how much Gwen earns altogether.  $h$  = number of hours worked.

$$\$12.50h = \text{total earnings}$$

How many hours did Gwen work last week?

- (a) 35 hours      (b) 37 hours  
 (c) 40 hours      (d) 42 hours

16. The following equation may be used to convert inches to centimeters.

$$2.54i = \text{total number of cm}$$

Use the formula to figure out how many centimeters are in 18 inches if  $i$  = number of inches.

- (a) 22.86 cm      (b) 45.72 cm  
 (c) 54.12 cm      (d) 64.48 cm

17. Find the value of "n" in the following equation.

$$9n - 5 = 58$$

(a)  $n = 5$

(b)  $n = 6$

(c)  $n = 7$

(d)  $n = 8$

18. Find the value of "n" in the following equation.

$$(n - 9)^2 = 36$$

(a)  $n = 12$

(b)  $n = 15$

(c)  $n = 18$

(d)  $n = 21$

19. Find the value of "d" in the following equation.

$$2.5d = 40$$

(a)  $d = 16$

(b)  $d = 18$

(c)  $d = 22$

(d)  $d = 24$

20. Find the value of "m" in the following equation.

$$\frac{1}{5}m = \frac{3}{5}$$

(a)  $m = 2$

(b)  $m = 3$

(c)  $m = 4$

(d)  $m = 5$

21. Find the value of "c" in the following equation.

$$2c + 4.5 = 15.5$$

(a)  $c = 3.5$

(b)  $c = 4.2$

(c)  $c = 4.5$

(d)  $c = 5.5$

22. Find the value of "g" in the following equation.

$$g + 12.5 = 24$$

(a)  $g = 8.5$

(b)  $g = 11.5$

(c)  $g = 14.9$

(d)  $g = 36.5$

23. Find the value of "a" in the following equation.

$$\frac{3}{4}a = 6$$

(a)  $a = 6$

(b)  $a = 7$

(c)  $a = 8$

(d)  $a = 9$

24. Find the value of "k" in the following equation.

$$4(k + 9) = 64$$

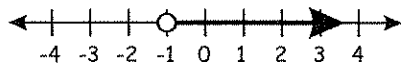
(a)  $k = 6$

(b)  $k = 7$

(c)  $k = 8$

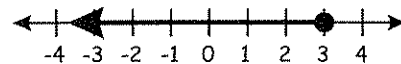
(d)  $k = 9$

25. Select the inequality that represents the following graph.



- (a)  $x \geq -1$       (b)  $x > -1$   
(c)  $x < -1$       (d)  $x \leq -1$

26. Select the inequality that represents the following graph.



- (a)  $x \geq 3$       (b)  $x > 3$   
(c)  $x < 3$       (d)  $x \leq 3$

27. Andrew is trying to save at least \$80 to buy a pair of shoes. If Andrew already has \$45 saved, which inequality represents how much more Andrew needs to buy the shoes he wants?

- (a)  $x \geq \$35$       (b)  $x > \$35$   
(c)  $x < \$35$       (d)  $x \leq \$35$

28. Select the graph represented by the following inequality.

$$x > -5$$

- (a) (b)   
(c) (d)

29. A car is traveling on a highway at 62 miles per hour. If the speed limit is 70 miles per hour, which inequality represents how much faster the car can go without exceeding the speed limit?

- (a)  $s + 62 \leq 70$       (b)  $s + 62 < 70$   
(c)  $s + 62 \geq 70$       (d)  $s + 62 > 70$

30. What are all possible solutions for the following inequality?

$$4x + 2 > 18$$

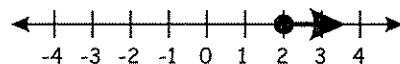
- (a)  $x \geq 5$       (b)  $x > 4$   
(c)  $x < 5$       (d)  $x \leq 4$

31. Select the set of numbers that will satisfy the following inequality.

$$5x > 20$$

- (a) 4, 5, 6, 7, 8      (b) 5, 6, 7, 8, 9  
(c) 3, 4, 5, 6, 7      (d) 0, 1, 2, 3, 4

32. Choose the inequality that represents all possible solutions shown on the graph.



- (a)  $x + 5 > 7$       (b)  $x - 5 \leq 7$   
(c)  $x + 2 \geq 6$       (d)  $x + 5 \geq 7$